Gene expression profile of mature B- and T- cells using the ImmunoChip

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B- and T-cells are the key components of the adaptive immunity. They are involved in many diseases such as cancer, allergy, arthritis, infection and autoimmune diseases. Understanding the differences of the genetic program between B- and T-cells may provide insights into the mechanism of the cause or defense of these diseases. We constructed a 13.2k non-redundant, organized and non-biased microarray for mouse immunology research (ImmunoChipTM) (www.immunochip.nih.gov) by bioinformatics algorithm. Immunological relevant clusters were selected based on expression patterns in publicly available immunological libraries including immune cells, primary and secondary lymphoid organs. Selected clusters were physically organized in gene, homologous gene and EST modules and the best representative clone selected. We used the ImmunoChip to profile mature B- and T-cells and identified 890 differently expressed genes encoding proteins for transcription factors, signal transduction molecules, CD and Ly markers, cytokines, chemokines, cytokine receptors, MHC molecules and genes of unknown function.